THE LUCITE® spectrum

VOLUME 5 • NUMBER 2 • 1967

Supercharger

Throughout the country, several bank credit card systems now exist. The oldest, and among the best known is the BankAmerica Service Corporation. Started in 1959 as a statewide all-purpose credit card in California, last year, as a result of many inquiries, BankAmerica Service Corporation was formed to help other banks throughout the country.

Participating stores display the small 3 x 5 inch plaque shown above to identify themselves and promote the program. The plaque consisting of a replica of the credit card silk-screened on sheet cast from Du Pont LUCITE® acrylic monomer was developed to identify, but with restraint and good taste since many participants are jewelry stores, haberdashers and women's fashion shops.

The plaques are cut to size from sheet made of LUCITE, the edges beveled and flame polished, and then silk-screened by Federal Sign and Signal Corporation.

A small, T-type easel, also made from LUCITE, is packed with the plaque and assembled by the user with a small square of double-faced foam adhesive.

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The purpose of THE LUCITE® SPECTRUM is to provide useful information on building construction products made with Du Pont LUCITE® acrylic plastic materials. This publication will be a medium through which ideas about these materials may be exchanged. Your comments and suggestions are invited. If you desire further information on any product mentioned in this issue, please write to: The Editor, THE LUCITE® SPECTRUM, E. I. du Pont de Nemours & Co. (Inc.), 2420 Nemours Bldg., Wilmington, Delaware 19898.

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Better things for better living . . . through chemistry

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THE COVER:

A fountain spurts skyward under skylights made with acrylic sheet cast from LUCITE® with an unusual baffle treatment in Dallas' new NorthPark Mall, as the architects "Let the Outside In" . . . story on Page 6.

PLASTICS DEPARTMENT

E. I. DU PONT DE NEMOURS & CO. (INC.) • WILMINGTON, DELAWARE 19898

EDITOR: R. F. WELSH, JR. • ART DIRECTOR: R. L. DOWNES • PRODUCTION SUPERVISOR: J. C. RECORDS

A Lesson in Lucite®

The Newark Board of Education recently dedicated the Montgomery Street School, part of its $41 million program for new schools and major additions to present facilities.

The new school, housing complete facilities for the vocational training of mentally retarded children educable consists of an older building which has been remodeled, and a new section, both completely glazed with Evr•Kleer acrylic sheet cast from Du Pont LUCITE® acrylic monomer.

This was the first time that the Newark Board of Education had used sheet LUCITE in a major construction project. But, Joseph L. Epstein, Administrative Engineer for the Board, said that in his opinion it has a definite future.

"Acrylic sheet made of LUCITE is not new," Epstein said, "and we have had some experience with it in the past several years as a replacement material for broken glass." He noted that the school board noticed it was spending about $50,000 a year replacing broken glass windows throughout its 75 schools, ranging from pre-kindergarten schools through high schools.

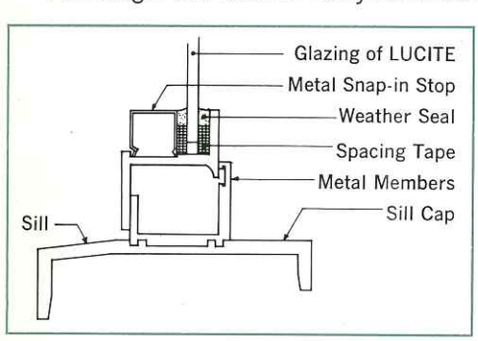
"We sought a way to reduce this expenditure, and we feel that this is a good one," Epstein said.

"To date, we have had no major problems with the acrylic sheet cast from LUCITE," said Epstein. "I know, or I can safely assume, that everyone in the educational system, including teachers, students, board members, and even the city's taxpayers, are quite happy with the savings we have realized with this product."

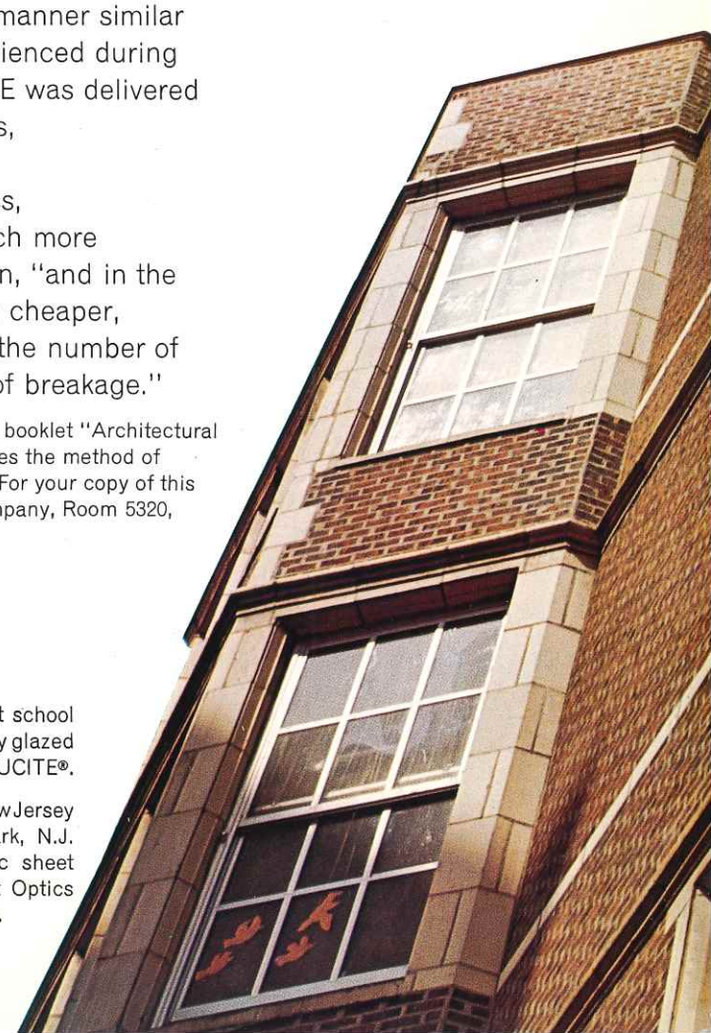
Epstein pointed out that the resistance to breakage of acrylic sheet aside from solving vandalism problems offered an additional benefit, "The children, particularly the younger ones, have a tendency to write and draw on the windows. With the acrylic sheet cast from LUCITE, there is no danger of them getting hurt by broken glass."

The acrylic sheet was installed in the aluminum frames in a manner similar to glass. The only difference noted was no breakage was experienced during installation. During this major construction, the sheet of LUCITE was delivered to the job cut-to-size. In replacing broken glass at other schools, it will be cut at the job.

"Although the cost of acrylic sheet is about twice that of glass, the installed cost is much more favorable," notes Epstein, "and in the long run it will be much cheaper, due to the reduction in the number of replacements because of breakage."

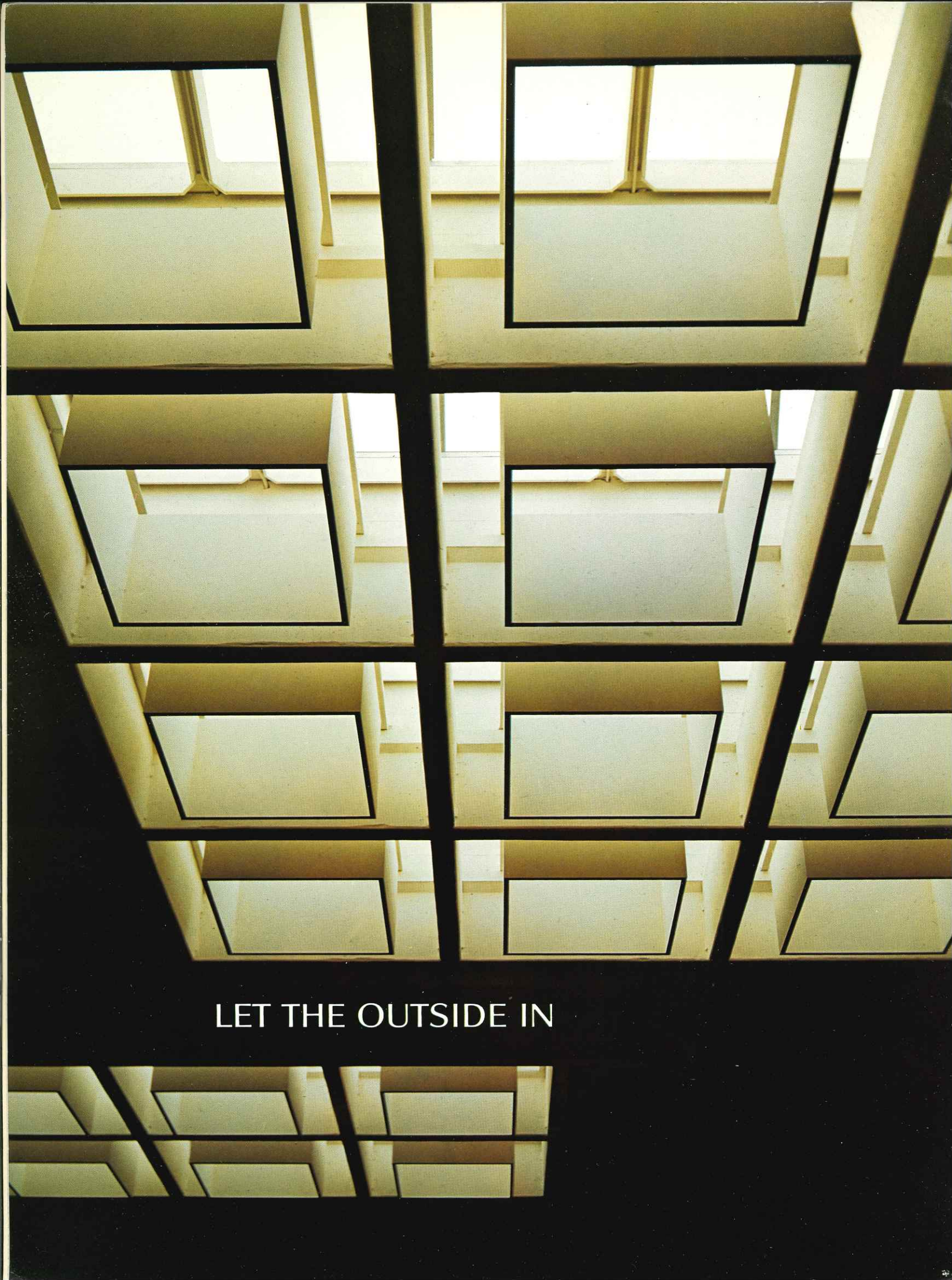


This installation detail from the booklet "Architectural Glazing with LUCITE®" illustrates the method of installation used at the school. For your copy of this free booklet, write Du Pont Company, Room 5320, Wilmington, Delaware 19898.



Montgomery Street School is the first school in Newark, New Jersey to be completely glazed with acrylic sheet cast from Du Pont LUCITE®.

Montgomery Street School, Newark, New Jersey
Architect: William E. Lehman, Newark, N.J.
Glazing Contractor: Evr•Kleer acrylic sheet cast from Du Pont LUCITE® by Cast Optics Corporation, Hackensack, New Jersey.


LET THE OUTSIDE IN

NorthPark Center, Dallas, Texas • Architects: Harrell & Hamilton
Structural Engineer: Mullen & Powell, Inc. • Mechanical & Electrical Eng.:
William K. Hall, Jr. • General Contractor: Henry C. Beck Company
Skylight Manufacturer: Naturalite, Inc.

From its inception, NorthPark, an enclosed completely air-conditioned shopping mall, was planned as a fashion center, and all efforts were made to display and sell fashionable merchandise in the best way possible.

"The selection of the color of the brick made the interior lighter, part of our plan to keep the built-in distractions at a minimum so the shops would be the main feature," says Key Kolb, partner in the architectural firm of Harrell and Hamilton.

"The quarter mile long mall was planned to accommodate a number of things. Art shows, seasonal decorations, concerts and theatrical productions, even automobile and boat shows. Changing water effects in the fountain along the mall provide a change of pace. The use of plantings was minimized but the plantings were carefully selected and the flowers are changed to reflect the seasons."

The type of light was therefore quite important in the implementation of the concept. "The beauty of natural light is important for us. It makes truer color, which is important when you're selling fashions and, basically, we're a fashion center, whether it's clothing or furniture," reported Mr. Jerry Childs, Public Relations Director for the Center.

"Shopping Centers up to this time (construction of NorthPark) have suffered from a lack of natural light. Also, our use of white, natural clay brick for interiors made it important for us to have natural light. We also wanted the outdoor feeling even though the mall and the display windows of the stores are indoors and protected," recalled Childs.

Skylights were the obvious answer to the lighting problem and the architects called in the firm of Naturalite, Inc., to plan the skylight installation.

Though located in Dallas, Naturalite has national distribution and is strongly engineering-oriented.

John J. Kemendo, Sr., President of Naturalite, said, "During the preliminary design stages, Naturalite's engineer assisted in determining the amount of light required and in locating the skylights in the proper area in the mall."

"We worked with the architects and their design to achieve the effect they wanted with lighting in the mall areas and to utilize materials which allow the transmission of sufficient light and which would withstand the sometimes violent weather conditions of this section of the country." (In addition to high temperatures, Dallas is located in "tornado alley" and hail storms frequently occur.)

The material chosen was Evr•Kleer acrylic sheet cast from Du Pont LUCITE®. Translucent white sheet with 65% light transmission was chosen as the optimum to provide sufficient light and yet hold down the air conditioning load.

Mr. Key Kolb of Harrell & Hamilton said, "We selected the sheet made from LUCITE because of its excellent light diffusion qualities. It imparted a warm light to the interior complementing the color schemes and helping make this a successful indoor-outdoor air conditioned mall.

The skylighting in NorthPark is divided into six areas composed of groupings of small skylights, a total of 125 units each measuring 20′ x 6′.

Naturalite formed the Evr•Kleer sheet, assembled it in extruded aluminum frames, and installed the skylights on the job.

Although the acrylic sheet is the prime light diffuser, the architects added baffles below the skylight for further light control and to add visual interest to the ceiling.

Supplemental lighting for overcast days consists of fluorescent lights located at the ceiling perimeter. Light for night operation is provided by mercury-vapor lamps, and because the skylights are in the best lighting location, the lamps were placed within the skylight frame. This provides the same light distribution pattern as during the day, and at night the lights within the mall shine upward through the skylights adding to the design effect of the exterior.

THE KING AND ALL THE COURT

Nestled in the hills of Fairfax County, Virginia, lies Kings Park, a new and growing residential suburb of Washington, D.C. In keeping with the rest of the community, the developer, Kings Park Associates, landscaped the shopping center to fit the natural beauty of the setting. Every effort was made to preserve the trees while providing ample shopping and parking space, but every commercial establishment needs a sign, even those who rely on a small local community for most of their trade. Even people who know the store is there need reminding. But signs in shopping centers can become very competitive and can ruin the whole architectural scheme.

The sign manufacturer, when consulted, suggested one sign location for all stores, making uniformity a natural requirement and providing better billing for the stores at a distance, since the center is built at a right angle to the main highway.

The finished sign although certainly eye-catching, since it is 40 feet high and 20 feet wide, is in keeping with the natural treatment of the buildings.

Thirty-eight foot high, 14 inch square, painted and finished wood grained posts support four-foot high gold, fabricated lanterns with frosted pattern acrylic lenses. The individual signs, supported between these posts, are internally illuminated, double-faced signs with natural wood background and fabricated letters of LUCITE®. The background material is ¾″, texture 1-11, exterior plywood stained and varnished. The letters are fabricated of 3/16″, translucent white, Evr•Kleer acrylic sheet cast from Du Pont LUCITE® acrylic monomer. The background is cut out, the letters pushed through and internally lighted by T-12 high output fluorescent lamps.

The Kings Park panel is 9 feet high and 18 feet wide, the others are 4 feet high x 18 feet wide.

Credits: Kings Park Shopping Center, Fairfax County, Virginia
Developer: Kings Park Associates, Washington, D.C.
Sign Manufacturer: Art Display Company, Washington, D.C.
Close-up (below) shows letters fabricated from sheet of LUCITE® cut through wood background to permit internal illumination.

Kings Park
SHOPPING CENTER
GIANT FOOD
PEOPLES DRUG
PEOPLES BANK & TRUST CO.
OF FAIRFAX
LEASING AGENTS
ROSENFELD REALTY CO. 244-4900

View of parking garage (below) shows difference in treatment of lighting in coffer-type ceiling over parking area and over the pedestrian walkways. Finished ceiling can be seen in background in approach to terminal.

Photo at right shows the finished ceiling and increased lighting continuing the architectural progression in the approach to the terminal. Single fixtures are used over the motorized walkway while groupings of four are used over the larger lobby areas.

Architect: Edward B. Page, H. J. Degenkolb & Assoc., Architect-Engineers
Consulting Engineers: G. M. Simonson & T. R. Simonson, Consulting Engineers
Electrical Contractor: Consolidated Comstock Company
Fixture Manufacturer: Columbia Lighting Co., Inc.

Orderly Progression

Leaving your car at the new parking garage and proceeding to the new South Terminal of the San Francisco International Airport is an orderly progression, in an architectural sense, from the utilitarian garage to the comfortable terminal.

In the parking area of the garage, no attempt is made to finish the coffer-type, concrete ceiling, and the unshielded fluorescent lamps are oriented above the traffic lanes in the direction of movement, acting as an overhead beacon.

At the pedestrian centers, near stairs and elevators in the four-story building, and above the pedestrian walkways, a more sophisticated treatment is used, recessing four lamp fixtures into compartments of the ceiling and installing a diffusing shield over the opening. At the approach to the terminal, the same lighting treatment is used but here the ceiling is finished with acoustical tile. The variety of treatments provides an interesting and smooth transition from garage to terminal.

Lighting of the garage was handled by Edward B. Page, H. J. Degenkolb & Associates, Architect-Engineers, and G. M. Simonson & T. R. Simonson, Consulting Engineers, using fixtures by Columbia Lighting, Inc. After the installation was designed, a suitable material had to be chosen for the diffuser shields of the one-thousand-plus fixtures.

Conditions are particularly demanding at the Bay Area Airport in that 700 flights a day add jet fuel fumes to the exhaust of the 2,750 cars that can park in the garage, and the salt moisture always present from the sea.

The consulting engineers, after making some preliminary investigations, holding a number of conferences with the architects and running experiments on a number of different materials in order to come up with one that could withstand the adverse conditions that prevail at San Francisco International Airport, recommended acrylic sheet cast from Du Pont LUCITE acrylic monomer.

The architects had decided against glass shields because of their weight and the inherent hazard of being dropped and broken during routine maintenance. And although the idea of installing metal louvre-type shieldings was considered, it too, was discarded because of the time and expense of maintenance.

Working very closely with architect Page and the consulting electrical and mechanical engineers, Columbia Lighting proceeded to provide the complete fixture that would meet job requirements.

The unit was a standard one with four 20 watt 24 inch fluorescent lamps. The frame was modified to fit the 30 x 30 inch openings in the ceiling and the 1½″ frame width permitted the installation of 28″ square, ⅛″ thick translucent white acrylic sheets.

The ceilings at the airport were completely finished off before Consolidated Comstock, the electrical contractors who were to handle the job of installation of the fixtures moved in.

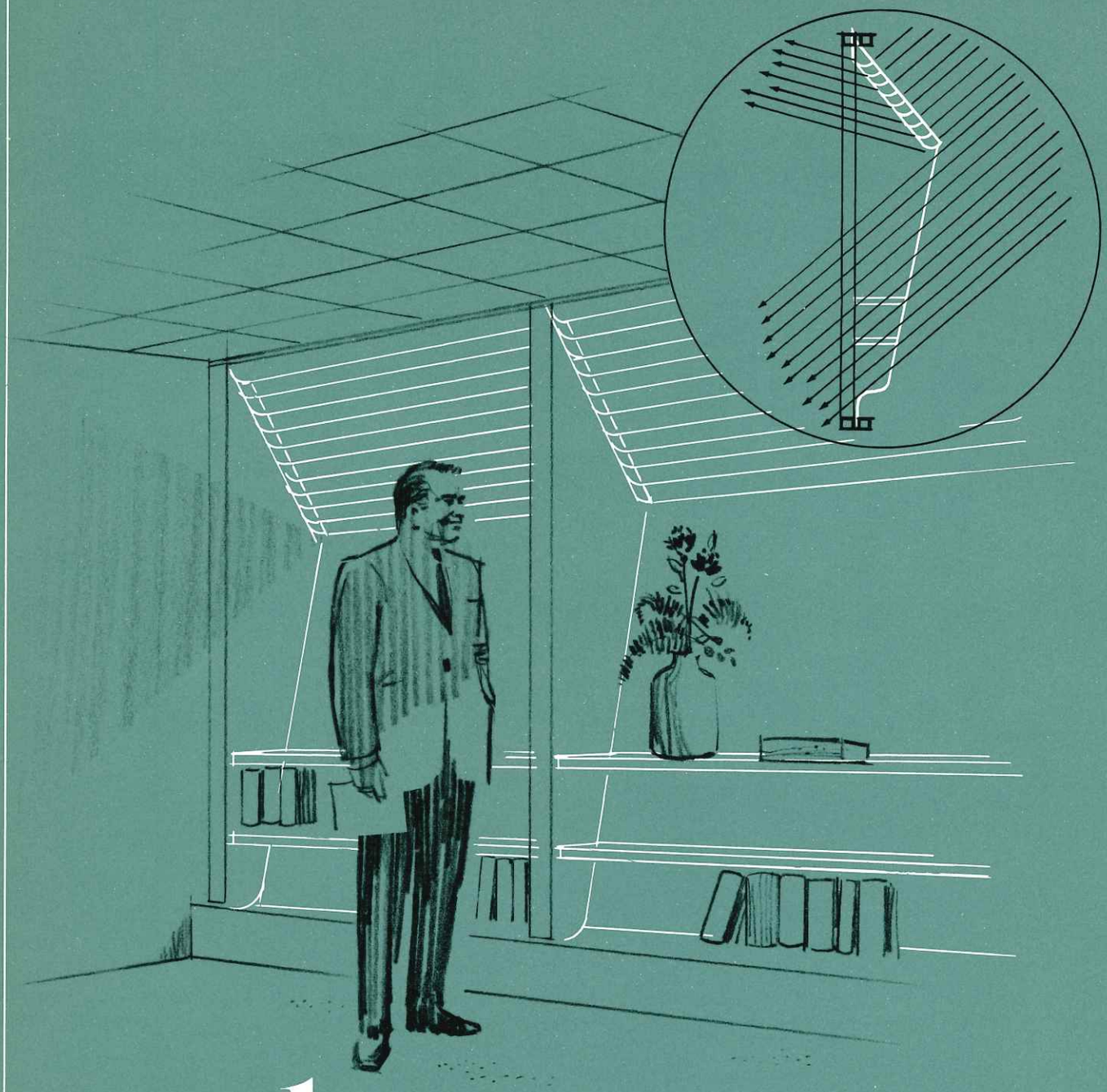
Installation proved to be simple, rapid, and electricians on the job moved along without incident—enabling Comstock to bring the installations to a close on schedule.

"We recommend acrylic panels made of Du Pont LUCITE," says John Baleix, job captain for the architectural firm, "simply because they met our job qualifications. They are lightweight, rugged, non-yellowing, and have an extremely nice appearance—a factor that can't be overlooked in a modern airport."

LUCITE DESIGN COMPETITION

CALIFORNIA STATE POLYTECHNIC COLLEGE

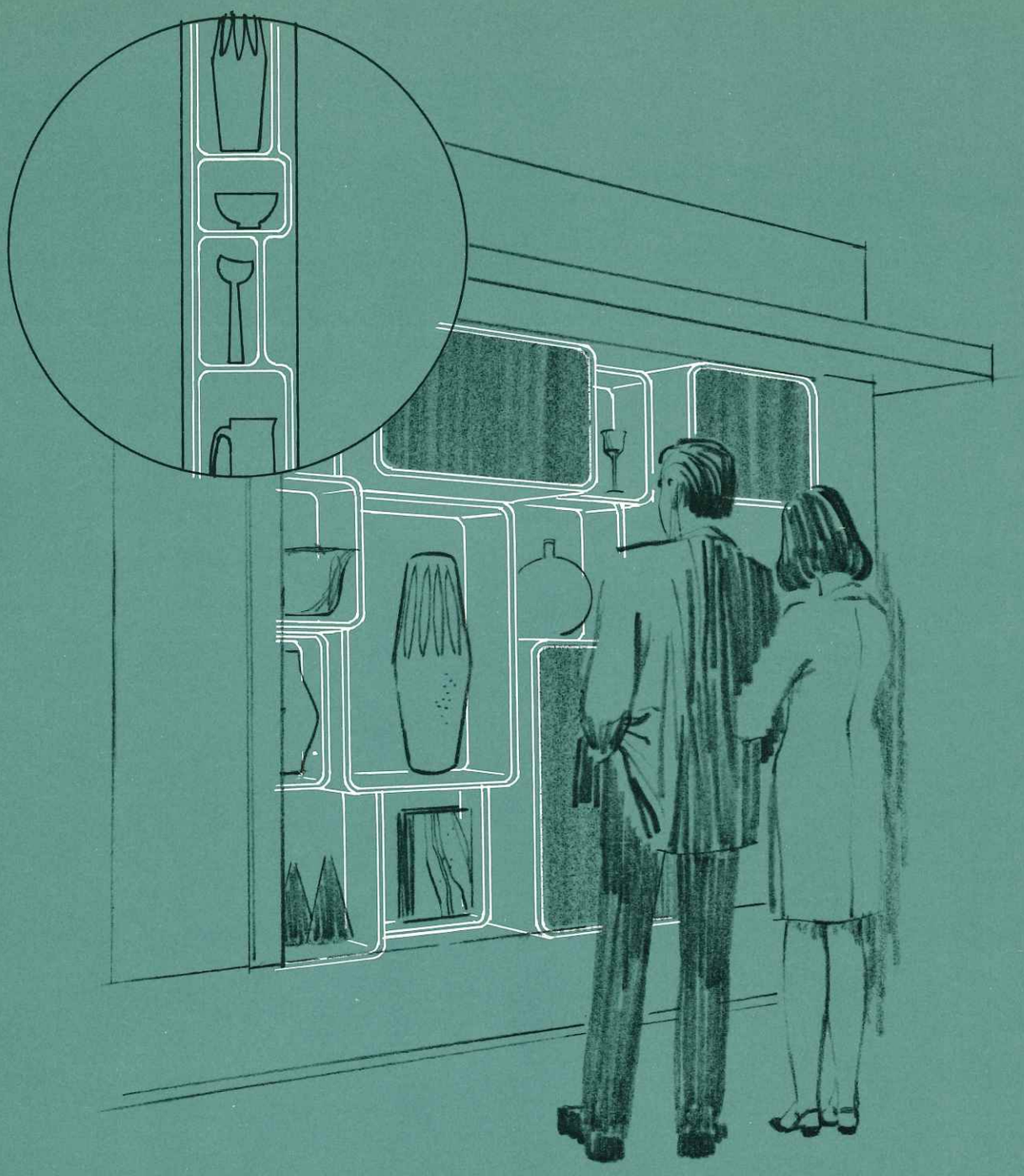
The 1966 LUCITE® Design Competition sponsored by Du Pont at the California State Polytechnic College at San Luis Obispo yielded a variety of novel window treatments.
The judges of the contest were:
Professor Garth Collier
Professor Charles Quinlan and
Professor John Stuart of the College, and
Mr. C. A. Beddow, Architectural Specialist for Du Pont.
The winning designs, shown on the following pages, were chosen on the basis of creative design. They are not necessarily commercially feasible at this time but explore design concepts which employ LUCITE in a manner consistent with its properties.



1

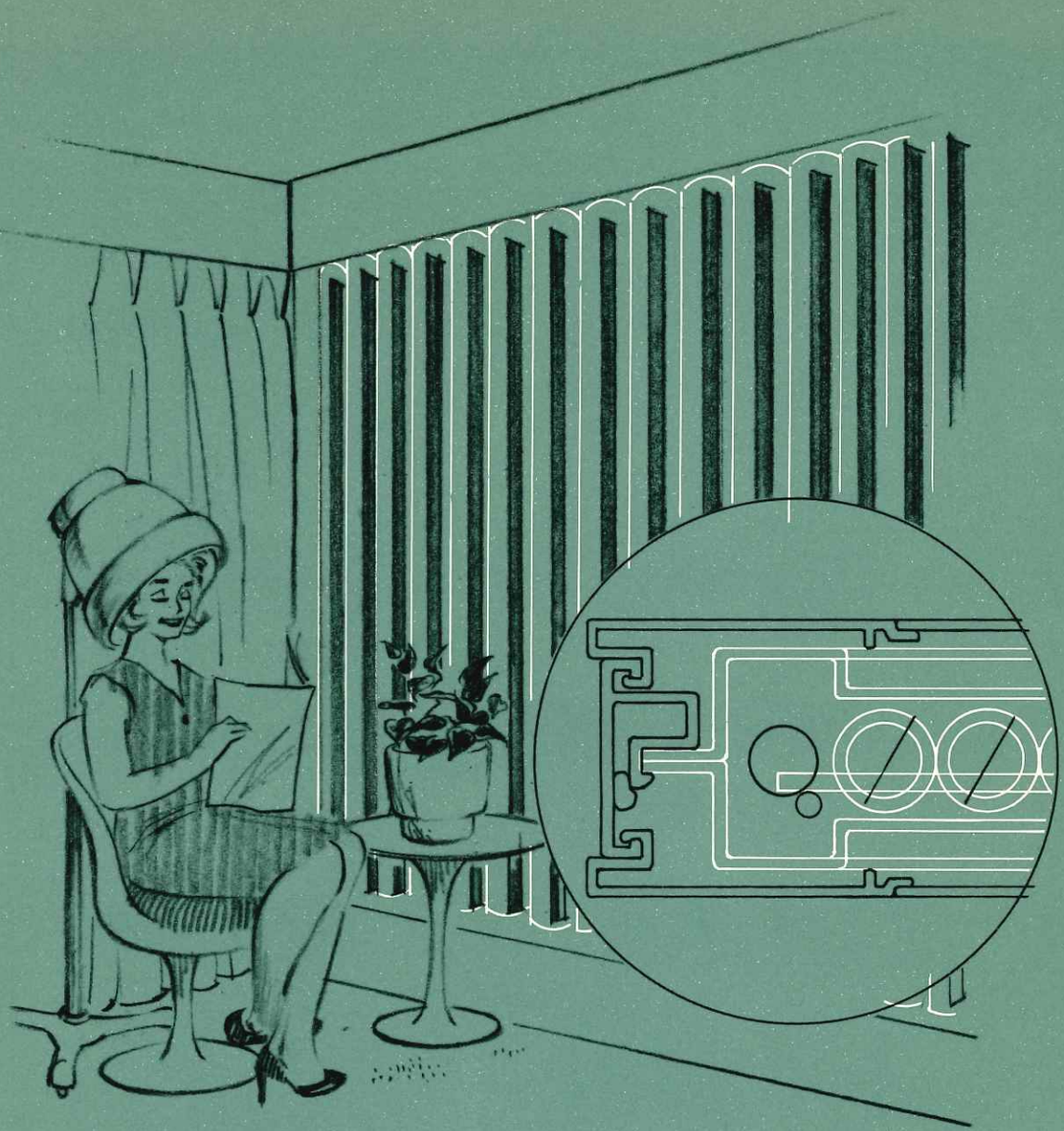
Lawrence Wenell's light control window also provides storage room in usually wasted space and the formed window creates a sculptured effect on the building exterior. The light control section deflects light to the ceiling, providing diffused light and avoiding harsh glare.

The window itself could be thermoformed from ⅜" gray tinted acrylic sheet cast from LUCITE. Thicker sheets of the same material could be used to fabricate the shelves which would be cemented in place. The fixed louvers of the light control section could be formed from clear acrylic sheet, metalized and cemented in place.



2

Ernest Swickard presents a compartmented space window which integrates the merchandise within the window and presents the product in a refreshing way. It provides each item with its own special space which is lighted from the perimeter of the window. Advertising or opaque colored panels can be used to create dramatic accents. The units would most probably be fabricated from cast sheet.



3

Craig B. Wheeler develops an idea for a unique venetian blind with "slats" only a few mils thick as an integral part of a window. A "slat" is actually only a thin vacuum metalized layer in the center of a rod of LUCITE®. A row of these rods properly oriented and mounted in a mechanism to rotate them evenly is enclosed in a case made from two formed sheets of LUCITE. The cavity is then filled with a liquid of the same index of refraction as LUCITE which would obliterate all interfaces and produce the appearance of a solid slab of LUCITE containing the very thin metalized film "slats" or vanes. Because LUCITE has a high index of refraction, light rays are severely bent toward a normal axis producing the visual impression of diminished thickness for the entire assembly, including the vanes.

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